

CLAIMS

I claim:

1. An optical arrangement comprising at least one transmission component for emitting radiation and a monitor component which is respectively assigned to the transmission component and detects a part of the radiation emitted by the transmission component for the purpose of monitoring the transmission component, wherein

the transmission component and the monitor component are arranged on a carrier substrate having an upper surface and at least one surface area which extends obliquely with regard to the upper surface, and wherein the obliquely extending surface area deflects onto the monitor component the part of the radiation emitted by the transmission component which is to be detected by the monitor component.

2. The arrangement as claimed in claim 1, wherein the transmission component emits the part of the radiation which is to be detected by the monitor component downward, in the direction of the carrier substrate, this part of the radiation being reflected at the obliquely extending surface area.

3. The arrangement as claimed in claim 2, wherein the transmission component comprises a vertically emitting element whose optically active zone is formed on a top side of the element, and the part of the radiation that is detected by the monitor component being transmitted out from an underside of the element in the direction of the carrier substrate.

4. The arrangement as claimed in claim 3, wherein the monitor component has an obliquely ground surface

area oriented in such a way that the radiation reflected from the obliquely extending area of the carrier substrate is refracted at the obliquely ground surface area of the monitor component in the direction of the optically active zone of the monitor component.

5. The arrangement as claimed in claim 4, wherein the optically active zone of the monitor component is formed on a top side that faces away from the carrier substrate.

6. The arrangement as claimed in claim 1, wherein the obliquely extending surface area of the carrier substrate extends at an angle of 45° relative to the upper surface.

7. The arrangement as claimed in claim 1, wherein the upper surface defines a first plane, and the carrier substrate includes a second surface defining a second plane that is parallel to the first plane, the first and second planes having different heights and being connected by the obliquely extending surface area, the transmission component being arranged on the upper surface and the monitor component being arranged on the second surface.

8. The arrangement as claimed in claim 1, wherein the carrier substrate comprises a second obliquely extending surface area which is oriented to deflect the part of the radiation reflected from the first obliquely extending surface area onto the monitor component.

9. The arrangement as claimed in claim 8, wherein the part of the radiation deflected by the second obliquely extending surface area radiates through an

underside of the monitor component and in the process is detected by an optically active zone formed on a top side of the monitor component.

10. The arrangement as claimed in claim 9, wherein the two obliquely extending surface areas of the carrier substrate represent lateral edges of a cutout formed in the upper surface of the carrier substrate.

11. The arrangement as claimed in claim 1, wherein the transmission component and the reception component comprises submodules that are contact-connected to the carrier substrate.

12. The arrangement as claimed in claim 1, further comprising a plurality of second transmission components mounted on the upper surface, and a plurality of second monitor components respectively assigned to corresponding ones of the plurality of transmission components.

13. The arrangement as claimed in claim and 12, wherein the plurality of second transmission components and the plurality of second reception components comprise submodules that are contact-connected to the carrier substrate, and wherein the submodules are respectively formed as an array of transmission components and an array of monitor components.

14. The arrangement as claimed in claim 1, wherein the transmission component comprises a laser.

15. The arrangement as claimed in claim 1, wherein the monitor component comprises a photodiode.

16. An apparatus comprising:

a substrate including a first surface defining a first plane and a second surface defining a second plane that extends obliquely relative to the first plane;

a transmission component mounted on the first surface for emitting radiation such that a portion of the emitted radiation is reflected by the second surface; and

a monitor component mounted on the substrate and positioned to receive the reflected portion of the emitted radiation.

17. The apparatus of claim 16,

wherein the substrate further includes a third surface defining a third plane that is parallel to the first plane,

wherein the second surface extends between the first surface and the second surface, and

wherein the monitor component is mounted on the third surface.

18. The apparatus of claim 17,

wherein the monitor component includes a side surface defining an oblique angle relative to the third surface, and

wherein the monitor component is positioned such that the reflected portion of the emitted radiation passes through the side surface.

19. The apparatus of claim 16,

wherein the substrate further includes a third surface located in an optical path between the second surface and the monitor component, and

wherein the third surface is oriented to reflect the portion of emitted radiation, after being reflected by the second surface, to the monitor component.

20. The apparatus of claim 19,

wherein the transmission component is mounted on a first section of the first surface,

wherein the monitor component is mounted on a second section of the first surface, and

wherein the second and third surfaces define a cutout located between the first and second sections of the first surface.